



Patent
Case No.: 54477US024

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: PEREZ, MARIO A.
Application No.: 10/618961 Group Art Unit: 1732
Filed: July 14, 2003 Examiner: Unknown
Title: COMPOSITE ARTICLES REINFORCED WITH HIGHLY
ORIENTED MICROFIBERS

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

| CERTIFICATE OF MAILING | |
|--|-----------------------------|
| I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on: | |
| FEB 13 2004 | <i>Hylis H. Froelke</i> |
| Date | Signed by: Hylis H. Froelke |

Dear Sir:

Pursuant to 37 CFR §§ 1.56, 1.97, and 1.98, enclosed is a completed Form PTO-1449, citing references submitted for consideration by the Examiner. Copies of any cited foreign patents, non-patent literature, and unpublished US application documents are enclosed. Pursuant to the waiver in the Pre-OG Notice, dated July 11, 2003, copies of US patents and published US patent applications are no longer required and are not enclosed. It is respectfully requested that the Examiner initial and return the enclosed Form PTO-1449 to indicate that each reference has been considered.

If a first Office Action on the merits has been mailed prior to the mailing date of this document, please charge the fee for consideration of an Information Disclosure Statement set forth in 37 CFR § 1.17(p), and if necessary, please charge any additional fees, or credit any overpayment to Deposit Account No. 13-3723.

Respectfully submitted,

Date

FEB 13, 2004

By: 

Kent S. Kokko, Reg. No.: 33,931

Telephone No.: (651) 733-3597

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

| | | | |
|---|--|----------------------|----------------|
| Substitute for form 1449A/PTO (modified) <h1 style="margin: 0;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</h1> <div style="display: flex; align-items: center; justify-content: center; margin-top: 20px;"> <div style="margin-left: 20px;"> (Use as many sheets as necessary) Page 1 of 5 </div> </div> | | Application Number | 10/618961 |
| | | Filing Date | July 14, 2003 |
| | | First Named Inventor | Perez, Mari A. |
| | | Art Unit | 1732 |
| | | Examiner Name | |
| | | Attorney Case Number | 54477US024 |

| U.S. Patent Documents | | | | | |
|-----------------------|-------------|----------------------------------|---|--|---|
| Exam. Init.* | Cite No. | Document Number | Publication Date or Issue Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Doc. Number-(Kind Code if Known) | | | |
| | A1 | US- Re: 30,782 | 10/27/1981 | van Turnhout | |
| | A2 | US- Re: 31,285 | 06/21/1983 | van Turnhout et al. | |
| | A3 | US- Re: 32,171 | 06/03/1986 | van Turnhout | |
| | A4 | US-3,416,714 | 12/17/1968 | Skinner | |
| | A5 | US-3,470,594 | 10/07/1969 | Kim | |
| | A6 | US-3,470,685 | 10/07/1969 | Hall et al. | |
| | A7 | US-3,490,663 | 07/20/1970 | Skinner | |
| | A8 | US-3,500,626 | 03/17/1970 | Sandiford | |
| | A9 | US-3,695,025 | 03/10/1972 | Gibbon | |
| | A10 | US-3,719,540 | 03/06/1973 | Hall et al. | |
| | A11 | US-4,065,214 | 12/20/1977 | FitzGerald | |
| | A12 | US-4,134,951 | 01/16/1979 | Dow et al. | |
| | A13 | US-4,330,499 | 05/18/1982 | von und zu Aufsess et al. | |
| | A14 | US-4,348,350 | 09/07/1982 | Meier et al. | |
| | A15 | US-4,456,648 | 06/26/1984 | Adamse et al. | |
| | A16 | US-4,524,101 | 06/18/1985 | Eickman et al. | |
| | A17 | US-4,587,291 | 05/06/1986 | Gardziella et al. | |
| | A18 | US-4,588,537 | 05/13/1986 | Klaase et al. | |
| | A19 | US-4,595,738 | 06/17/1986 | Hufnagel et al. | |
| | A20 | US-4,608,089 | 08/26/1986 | Gale et al. | |
| | A21 | US-4,626,263 | 12/02/1986 | Inoue et al. | |
| | A22 | US-4,652,282 | 03/24/1987 | Ohmori et al. | |
| | A23 | US-4,675,582 | 06/23/1987 | Hommes et al. | |
| | A24 | US-4,714,716 | 12/22/1987 | Park | |
| | A25 | US-4,789,504 | 12/06/1988 | Ohmori et al. | |
| | A26 | US-4,825,111 | 04/25/1989 | Hommes et al. | |
| | A27 | US-4,853,602 | 08/01/1989 | Hommes et al. | |
| | A28 | US-4,867,937 | 09/19/1989 | Li et al. | |

| | |
|--|-------------------------|
| *Examiner: | Date Considered: |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

Information Disclosure Statement)

| | | |
|---|----------------------|----------------|
| Substitute for form 1449A/PTO (modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) FEB 17 2004 PATENT & TRADEMARK OFFICE | Applicati n Number | 10/618961 |
| | Filing Date | July 14, 2003 |
| | First Named Invent r | Perez, Mari A. |
| | Art Unit | 1732 |
| | Examiner Name | |
| | Attorney Case Number | 54477US024 |

Page 2 of 5

| U.S. Patent Documents | | | | | |
|-----------------------|-------------|----------------------------------|---|--|---|
| Exam. Init.* | Cite No. | Document Number | Publication Date or Issue Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Doc. Number-(Kind Code if Known) | | | |
| | A29 | US-4,916,198 | 04/10/1990 | Scheve et al. | |
| | A30 | US-4,940,736 | 07/10/1990 | Altepping et al. | |
| | A31 | US-4,973,517 | 11/27/1990 | Lammers et al. | |
| | A32 | US-4,990,401 | 02/05/1991 | Renalls | |
| | A33 | US-5,015,676 | 05/14/1991 | Macholdt et al. | |
| | A34 | US-5,015,767 | 05/14/1991 | Maignan et al. | |
| | A35 | US-5,021,473 | 06/04/1991 | Macholdt et al. | |
| | A36 | US-5,036,262 | 07/30/1991 | Schonbach | |
| | A37 | US-5,043,197 | 08/27/1991 | Remalls | |
| | A38 | US-5,049,347 | 09/17/1991 | Magill et al. | |
| | A39 | US-5,051,225 | 09/24/1991 | Hommes et al. | |
| | A40 | US-5,057,710 | 10/15/1991 | Nishiura et al. | |
| | A41 | US-5,069,994 | 12/03/1991 | Gitzel et al. | |
| | A42 | US-5,072,493 | 12/17/1991 | Hommes et al. | |
| | A43 | US-5,112,677 | 05/12/1992 | Tani et al. | |
| | A44 | US-5,147,748 | 09/15/1992 | Gitzel et al. | |
| | A45 | US-5,171,815 | 12/15/1992 | Magill et al. | |
| | A46 | US-5,176,833 | 01/05/1993 | Vaughn et al. | |
| | A47 | US-5,258,220 | 11/02/1993 | Joseph | |
| | A48 | US-5,269,995 | 12/14/1993 | Ramanathan et al. | |
| | A49 | US-5,366,804 | 11/22/1994 | Dugan | |
| | A50 | US-5,378,537 | 01/03/1995 | Masuda et al. | |
| | A51 | US-5,387,388 | 02/07/1995 | Van Erden et al. | |
| | A52 | US-5,395,644 | 03/07/1995 | Affinito | |
| | A53 | US-5,434,002 | 07/18/1995 | Yoon et al. | |
| | A54 | US-5,472,481 | 12/05/1995 | Jones et al. | |
| | A55 | US-5,496,507 | 03/05/1996 | Angadjivand et al. | |
| | A56 | US-5,525,287 | 06/11/1996 | Van Erden et al. | |

| | |
|--|------------------|
| *Examiner: | Date Considered: |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

| | | | |
|--|--|----------------------|-----------------|
| Substitute for form 1449A/PTO (modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT FEB 17 2004 PATENT & TRADEMARK OFFICE as many sheets as necessary Page 3 of 5 | | Application Number | 10/618961 |
| | | Filing Date | July 14, 2003 |
| | | First Named Inventor | Per z, Mario A. |
| | | Art Unit | 1732 |
| | | Examiner Name | |
| | | Attorney Case Number | 54477US024 |

| U.S. Patent Documents | | | | | |
|-----------------------|----------|----------------------------------|--|---|---|
| Exam. Init.* | Cite No. | Document Number | Publication Date or Issue Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Doc. Number-(Kind Code if Known) | | | |
| | A57 | US-5,554,722 | 09/10/1996 | Eichenauer et al. | |
| | A58 | US-5,558,809 | 09/24/1996 | Groh et al. | |
| | A59 | US-5,589,264 | 12/31/1996 | Yoon et al. | |
| | A60 | US-5,605,936 | 02/25/1997 | DeNicola, Jr. et al. | |
| | A61 | US-5,695,709 | 12/09/1997 | Van Erden et al. | |
| | A62 | US-5,698,489 | 12/16/1997 | Shirai et al. | |
| | A63 | US-5,783,503 | 07/21/1998 | Gillespie et al. | |
| | A64 | US-5,807,516 | 09/15/1998 | Wolstenholme et al. | |
| | A65 | US-5,845,355 | 12/08/1998 | Strahm | |
| | A66 | US-5,871,845 | 02/16/1999 | Dahringer et al. | |
| | A67 | US-5,908,598 | 06/01/1999 | Rousseau et al. | |
| | A68 | US-5,919,847 | 07/06/1999 | Rousseau et al. | |
| | A69 | US-5,945,215 | 08/31/1999 | Bersted et al. | |
| | A70 | US-5,945,221 | 08/31/1999 | Tsai et al. | |
| | A71 | US-5,968,635 | 10/19/1999 | Rousseau et al. | |
| | A72 | US-5,976,208 | 11/02/1999 | Rousseau et al. | |
| | A73 | US-5,998,308 | 12/07/1999 | Cohen | |
| | A74 | US-6,002,017 | 12/14/1999 | Rousseau et al. | |
| | A75 | US-6,013,587 | 01/11/2000 | Truong et al. | |
| | A76 | US-6,101,032 | 08/08/2000 | Wortman et al. | |
| | A77 | US-6,110,251 | 08/29/2000 | Jackson et al. | |
| | A78 | US-6,110,588 | 08/29/2000 | Perez et al. | |
| | A79 | US-6,123,752 | 09/26/2000 | Wu et al. | |
| | A80 | US-6,124,971 | 08/26/2000 | Ouderkirk et al. | |

| Foreign Patent Documents | | | | | | | |
|--------------------------|----------|-------------------------|----------------------------|--------------------------------|---|---|----------------------------|
| Exam. Init.* | Cite No. | Foreign Patent Document | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | Translation (Check if yes) |
| | | Ctry. Code | Number-KindCode (If known) | | | | |
| | B1 | GB | 1,073,741 | 06/28/1967 | | | |

| | |
|--|-------------------------|
| *Examiner: | Date Considered: |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Page 4 of 5

Applicati n Numb r

10/618961

Filing Date

July 14, 2003

First Named Invent r

Perez, Mario A.

Art Unit

1732

Examiner Name

Attorney Case Number

54477US024

Foreign Patent Documents

| Exam. Init.* | Cite No. | Foreign Patent Document | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | Translation (Check if yes) |
|-----------------|-------------|-------------------------|----------------------------|--------------------------------|--|---|-------------------------------|
| | | Ctry. Code | Number-KindCode (If known) | | | | |
| / | B2 | GB | 1,157,695 | 07/09/1969 | | | |
| / | B3 | GB | 1,171,543 | 11/19/1969 | | | |
| / | B4 | GB | 1,234,782 | 06/09/1971 | | | |
| / | B5 | GB | 1,267,298 | 03/15/1972 | | | |
| / | B6 | GB | 1,541,681 | 03/07/1979 | | | |
| / | B7 | GB | 1,605,004 | 12/16/1981 | | | |
| / | B8 | EP | 0 026 581 | 05/11/1983 | | | |
| / | B9 | EP | 0 806 512 A1 | 11/12/1997 | | | X |
| / | B10 | EP | 0 353 907 | 02/07/1990 | | | |
| / | B11 | JP | 02 672188 | 11/05/1997 | | | Abstract |
| / | B12 | JP | 4-194068 | 07/14/1992 | | | X |
| / | B13 | GB | 2 034 243 A | 06/04/1980 | | | |
| / | B14 | PCT | WO 95/05501 | 02/23/1995 | | | |
| / | B15 | PCT | WO 97/49326 | 12/31/1997 | | | |
| / | B16 | PCT | WO 97/44508 | 11/27/1997 | | | |
| / | B17 | PCT | WO 99/06622 | 02/11/1999 | | | |
| / | B18 | PCT | WO 99/36466 | 07/22/1999 | | | |
| / | B19 | PCT | WO 99/61520 | 12/02/1999 | | | |
| / | B20 | PCT | WO 99/20664 | 10/16/1998 | | | |
| / | B21 | PCT | WO 00/46435 | 08/10/2000 | | | |
| / | B22 | PCT | WO 00/00520 | 01/06/2000 | | | |
| / | B23 | PCT | WO 00/68301 | 11/16/2000 | | | |

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

| Exam. Init.* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published |
|-----------------|-------------|--|
| / | C1 | Bigg, "Mechanical Property Enhancement of Semicrystalline Polymers", <u>Polymer Engineering and Science</u> , vol. 28, No. 13, pp. 830-841, July 1988. |
| / | C2 | Davies, "The Separation of Airborne Dust and Particles", <u>Institution of Mechanical Engineers</u> , London, Proceedings 1B, 1952. |

*Examiner:

Date Considered:

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Information Disclosure Statement)

| | | |
|--|-------------------------|-----------------|
| Substitute for form 1449A/PTO (modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) Page 5 of 5 | Application Number | 10/618961 |
| | Filing Date | July 14, 2003 |
| | First Name and Inventor | Perez, Maria A. |
| | Art Unit | 1732 |
| | Examiner Name | |
| | Attorney Case Number | 54477US024 |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS | | |
|--|----------|--|
| Exam. Init.* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published |
| | C3 | Doyle, "Strong Fabrics for Fast Sails", <u>Scientific American</u> , pp. 60-67, July 1997. |
| / | C4 | Jones et al., "Crystalline Forms of Isotactic Polypropylene", <u>Makromol. Chem.</u> , vol 75, 134-158, 1964. |
| | C5 | J. Karger-Kocsis, "Polypropylene: Structure, Blends and Composites, vol. 1, 130-131, 1994. |
| | C6 | Kolpak et al., "Deformation of Cotton and Bacterial Cellulose Microfibrils", <u>Textile Research Journal</u> , pp. 568-572, July 1975. |
| | C7 | Piccarolo et al., "Crystallization of Polymer Melts Under Fast Cooling", <u>Journal of Applied Polymer Science</u> , vol. 46, 625-634, 1992. |
| | C8 | Roger S. Porter et al., <u>Journal of Macromolecular Science-Rev. Macromol. Chem. Phys.</u> , C35(a), 63-115, 1995. |
| | C9 | J. I. Raukola, "A New Technology to Manufacture Polypropylene Foam Sheet and Biaxially Oriented Foam Film", VTT Publications 361, Technical Research Center of Finland (1998). |
| | C10 | "Survey of Polymer Morphology", pp. 149-177 |
| | C11 | Zigmond W. Wilchinsky, "Measurement of Orientation in Polypropylene Film", <u>Journal of Applied Physics</u> , vol. 31, No. 11, pp. 1969-1972, November 1960 |
| | C12 | Encyclopedia of Chemical Technology, "Thin Films (Film Formation Techniques)" vol. 23, (4 th ed.), 1997 pp. 1040-1076 |
| | C13 | J. D. Affinito et al., "Polymer/Polymer, Polymer/Oxide, and Polymer/Metal Vacuum Deposited Interference Filters", <u>Proc. of the 10 International Conf. on Vacuum Coating</u> pp. 207-220, 1996 |

| | |
|--|------------------|
| *Examiner: | Date Considered: |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

Information Disclosure Statement)